



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: ADAMS METER, 1 FAIRVIEW AND TRADEMARKS
PO BOX 1412
Alexandria, Virginia 22313-0142
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09 865,454	05 29 2001	Shigeyuki Uzuwa	862.C2238	3754

8514 7590 05 22 2003

FITZPATRICK CELLA HARPER & SCINTO
30 ROCKEFELLER PLAZA
NEW YORK, NY 10112

EXAMINER

STEVENSON, ANDRE C

ART UNIT PAPER NUMBER

2812

DATE MAILED: 05 22 2003

Please find below and/or attached an Office communication concerning this application or proceeding.

P-5

Office Action Summary

Application No.

09/865,454

Applicant(s)

UZAWA, SHIGEYUKI

Examiner

Andre' C. Stevenson

Art Unit

2812

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED. (35 U.S.C. § 133)

Status

- 1) ☐ Responsive to communication(s) filed on _____.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) 1-38 is/are pending in the application.
- 4a) Of the above claim(s) 25-34 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-24, 35 and 36 is/are rejected.
- 7) ☐ Claim(s) 37, 38 is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on _____ is a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- a) ☐ All b) ☐ Some * c) ☐ None of the CERTIFIED copies of the priority documents have been
1. ☐ received.
2. ☐ received in Application No. (Series Code / Serial Number) _____.
3. ☐ received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. & 119(e).

Attachment(s)

- 15) ☐ Notice of References Cited (PTO-892)
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 18) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 19) ☐ Notice of Informal Patent Application (PTO-152)
- 20) ☐ Other _____

Detail Action

Election/Restrictions

Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1 through 24 and 35 through 38 drawn to a device, classified in class 257, subclass 9.
- II. Claims 25 through 30 are drawn to a method or manufacturing, classified in class 438, subclass 14.
- III. Claim 31 and 32 is drawn to a manufacturing plant, classified in class 148, subclass 95.
- IV. Claim 25 and 34 are drawn to a method for maintaining an exposure, classified in class 716, subclass 21.

Claims 25 through 34 have been withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in Paper No. 6 (04/29/03).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

Art Unit: 2812

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Claims 1 through 14, 17 through 24, 35 & 36 rejected under 35 U.S.C. 102(e) as being clearly anticipated by Nishi (U.S. Pat. No.6545746 B1).

Nishi (U.S. Pat. No.6545746 B1), for **Claim #1**, An exposure apparatus comprising: a plurality of housings, said housings are provided adjacently, which cover at least part of an optical path of exposing light (**Column 11, lines 37 through 56**); members transparent to exposing light provided at boundaries of the adjacent housings (**Column 12, lines 49 through 64**); a gas supplier which supplies the interior of each housing with a purging gas (**Column 7, lines 8 through 23**); pressure sensors which sense pressures inside respective ones of said housings (**Column 12, lines 49 through 64**); and a control unit which controls said gas supplier on the basis of outputs from said pressure sensors in such a manner that pressures within the respective

Art Unit: 2812

housings will attain respective ones of predetermined pressures (Column 33, lines 23 through 65, Column 34, lines 13 through 21)

With respect to **Claim #2**, an exposure apparatus comprising: a plurality of housings, said housings are provided adjacently, which cover at least part of an optical path of exposing light (**Column 11, lines 37 through 56**), members transparent to exposing light provided at boundaries of the adjacent housings (**Column 12, lines 49 through 64**); a gas supplier which supplies the interior of each housing with a purging gas (**Column 7, lines 8 through 23**); differential-pressure sensors which sense differences in pressure between adjacent ones of said housings; and a control unit which controls said gas supplier on the basis of outputs from said differential-pressure sensors in such a manner that pressures within the respective housings will attain respective ones of predetermined pressures, is taught by Nishi (U.S. Pat. No. 6545746 B1) (Column 12, lines 49 through 64, Column 33, lines 23 through 65, Column 34, lines 13 through 21).

With respect to **Claim #3**, the apparatus according to claim 1, wherein said gas supplier includes air conditioners capable of supplying a purging gas to respective ones of said housings and of exhausting gas from the interior of respective ones of said housings; said air conditioners being operated in such a manner that measured values provided by said pressure sensors attain respective ones of the predetermined

Art Unit: 2812

pressures, is taught by Nishi (U.S. Pat. No.6545746 B1) (column 33, lines 1 through 22, column 34, lines 13 through 20).

Furthermore, **Claim #4**, the apparatus according to claim 2, wherein said gas supplier includes air conditioners capable of supplying a purging gas to respective ones of said housings and of exhausting gas from the interior of respective ones of said housings; said air conditioners being operated in such a manner that measured values provided by said differential-pressure sensors attain respective ones of the predetermined pressures, is taught by Nishi (U.S. Pat. No.6545746 B1) (column 33, line 1 through 22, line 23 through 41).

With respect to **Claim #5**, the apparatus according to claim 1, wherein said housings include at least one of an optics space containing members of an optical system and a drive space containing driving members, is taught by Nishi (U.S. Pat. No.6545746 B1) (column 8, line 12 through 26, column 15, line 24 through 38, column 16, line 61 through 67, column 17, line 1 through 3, column 30, line 51 through 67).

Considering now **Claim #6**, the apparatus according to claim 2, wherein said housings include at least one of an optics space containing members of an optical system and a drive space containing driving members, is taught by Nishi (U.S. Pat. No.6545746 B1) (column 8, line 12 through 26, column 15, line 24 through 38, column 16, line 61 through 67, column 17, line 1 through 3, column 30, line 51 through 67).

Furthermore, **Claim #7**, the apparatus according to claim 5, wherein said optics space is at least one of a guiding optics space for introducing exposing light from a light source into the apparatus, an illuminating optics space for illuminating a reticle with the exposing light, and a projection optics space for projecting the reticle pattern onto the substrate, is taught by Nishi (U.S. Pat. No. 6,545,746 B1) (Abstract, column 9, line 35 through 65).

With respect to **Claim # 8**, the apparatus according to claim 6, wherein said optics space is at least one of a guiding optics space for introducing exposing light from a light source into the apparatus, an illuminating optics space for illuminating a reticle with the exposing light, and a projection optics space for projecting the reticle pattern onto the substrate, is taught by Nishi (U.S. Pat. No. 6,545,746 B1) (Abstract, column 9, line 35 through 65).

Considering now **Claim #9**, the apparatus according to claim 5, wherein said drive space is at least one of a reticle-stage space containing a reticle stage on which the reticle is mounted, a substrate-stage space containing a substrate stage on which the substrate is mounted, and a maskingblade space containing a masking blade, is taught by Nishi (U.S. Pat. No. 6,545,746 B1) (Abstract, column 9, line 35 through 65, column 15, line 56 through 67, column 16, line 1 through 8).

Furthermore, **Claim #10**, the apparatus according to claim 6, wherein said drive space is at least one of a reticle-stage space containing a reticle stage on which the reticle is mounted, a substrate-stage space containing a substrate stage on which the substrate is mounted, and a maskingblade space containing a masking blade, is taught by Nishi (U.S. Pat. No.6545746 B1) (column 5, line 55 through 67, column 6, line 1 through 4, column 7, line 23 through 39. Column 15, line 1 through 38).

With respect to **Claim #11**, the apparatus according to claim 5, wherein said optics space is a helium atmosphere and said drive space is a nitrogen-gas atmosphere, is taught by Nishi (U.S. Pat. No.6545746 B1) (column 33, line 1 through 22, column 45, line 43 through 67).

Considering now **Claim #12**, The apparatus according to claim 6, wherein said optics space is a helium atmosphere and said drive space is a nitrogen-gas atmosphere, is taught by Nishi (U.S. Pat. No.6545746 B1) (column 33, line 1 through 22, column 45, line 43 through 67).

Furthermore, **Claim #13**, the apparatus according to claim 7, wherein said control unit performs control in such a manner that pressure within said projection optics space is held constant, is taught by Nishi (U.S. Pat. No.6545746 B1) (column 33, line 23 through 65, column 34, line 13 through 21).

With respect to **Claim # 14**, the apparatus according to claim 8, wherein said control unit performs control in such a manner that pressure within said projection optics space is held constant, is taught by Nishi (U.S. Pat. No.6545746 B1) (column 33, line 23 through 65, column 34, line 13 through 21).

With respect to **Claim # 17**, the apparatus according to claim 3, wherein each of said air conditioners has a control valve for controlling a ratio of amount of purging gas supplied to amount of exhaust, and pressure within a corresponding housing is regulated by said control valve, is taught by Nishi (U.S. Pat. No.6545746 B1) (column 33, line 1 through 22, line 66 through 67, column 34, line 1 through 12).

Considering now **Claim #18**, the apparatus according to claim 4, wherein each of said air conditioners has a control valve for controlling a ratio of amount of purging gas supplied to amount of exhaust, and pressure within a corresponding housing is regulated by said control valve, is taught by Nishi (U.S. Pat. No.6545746 B1) (column 33, line 1 through 22, line 66 through 67, column 34, line 1 through 12).

Furthermore, **Claim #19**, the apparatus according to claim 1, wherein said control unit controls the pressure within each of said housings in such a manner that amount of deformation of said members due to a differential pressure between pressures within adjacent ones of said housings falls within a range in which said

Art Unit: 2812

differential pressure has no significant effect upon optical performance, is taught by Nishi (U.S. Pat. No.6545746 B1) (column 13, line 49 through 63).

With respect to **Claim # 20**, the apparatus according to claim 2, wherein said control unit controls the pressure within each of said housings in such a manner that amount of deformation of said members due to a differential pressure between pressures within adjacent ones of said housings falls within a range in which said differential pressure has no significant effect upon optical performance, is taught by Nishi (U.S. Pat. No.6545746 B1) (column 13, line 49 through 63).

Considering now **Claim #21**, the apparatus according to claim 1, wherein a laser light source for said exposure apparatus is an F, excimer laser source, is taught by Nishi (U.S. Pat. No.6545746 B1) (column 1, line 38 through 47).

Furthermore, **Claim #22**, the apparatus according to claim 1, wherein a laser light source for said exposure apparatus is an F2 excimer laser source, is taught by Nishi (U.S. Pat. No.6545746 B1) (column 1, line 38 through 47).

With respect to **Claim # 23**, the apparatus according to claim 1, wherein the purging gas is an inert gas, is taught by Nishi (U.S. Pat. No.6545746 B1) (column 33, line 1 through 22, column 45, line 43 through 67).

Considering now **Claim #35 & 36**, an exposure apparatus capable of performing data communication via a computer network, comprising: a network interface, which is connected to the network, for performing data communication, a display which displays results of the data communication; and a computer, which is connected to the network, for executing software for communicating data (**column 15, line 24 through 38, column 14, line 48 through 51, column 33, line 23 through 65**), said exposure apparatus further comprising: a plurality of housings, said housings are provided adjacently, which cover at least part of an optical path of exposing light; members transparent to exposing light provided at boundaries of the adjacent housings; a gas supplier which supplies the interior of each housing with a purging gas; pressure sensors which sense pressures inside respective ones of said housings; and a control unit which controls said gas supplier on the basis of outputs from said pressure sensors in such a manner that pressures within the respective housings will attain respective ones of predetermined pressures, is taught by Nishi (U.S. Pat. No.6545746 B1) (Column 11, lines 37 through 56, Column 12, lines 49 through 64, Column 7, lines 8 through 23, Column 12, lines 49 through 64, Column 33, lines 23 through 65, Column 34, lines 13 through 21).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nishi (U.S. Pat. No.6545746 B1) as applied to claims 1 through 14, 17 through 24, 35 & 36 above, and further in view of Hagiwara et al (U.S. Pat. No.6222610 B1).

Nishi (U.S. Pat. No.6545746 B1) discloses the claimed invention except for the spaces requires a high level of cleanliness is held at a pressure higher than the pressures of the other spaces. Hagiwara et al (U.S. Pat. No.6222610 B1) teaches that it is known to have spaces requires a high level of cleanliness is held at a pressure higher than the pressures of the other spaces.

Considering now **Claim #15**, the apparatus according to claim 1, wherein whichever of said spaces requires a high level of cleanliness is held at a pressure higher than the pressures of the other spaces, is taught by Hagiwara et al (U.S. Pat. No.6222610 B1) (column 7, line 58 through 67, column 8, line 1 through 7).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to spaces requires a high level of cleanliness is held at a pressure

higher than the pressures of the other spaces as taught by (Ref. B), since (Ref. B) states at column 7, line 58 through 67, column 8, line 1 through 7 that such a modification would allow the opening and closing of each of the electromagnetic valves to be controlled by the pressure control system.

Furthermore, **Claim #16**, the apparatus according to claim 2, wherein whichever of said spaces requires a high level of cleanliness is held at a pressure higher than the pressures of the other spaces, is taught by Hagiwara et al (U.S. Pat. No. 6,222,610 B1) (column 7, line 58 through 67, column 8, line 1 through 7).

Objected Claims

Claims 37 and 38 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim 37

- ✓ Software provides said display with a user interface for accessing a maintenance database.

Claim #38

- ✓ software provides said display with a user interface for accessing a maintenance database.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andre' Stevenson whose telephone number is (703) 308 6227. The examiner can normally be reached on Monday through Friday from 7:30 am to 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Niebling, can be reached on (703) 308 3325. The fax phone number for the organization where this application or proceeding is assigned is (703) 308 7724.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308 0956. Also, the proceeding numbers can be used to fax information through the Right Fax system;

- TC2800 Official Before-Final RightFAX - **(703) 746-8802**
- TC2800 Official After-Final RightFAX - (703) 872-9319
- TC2800 Customer Service RightFAX - (703) 872-9317

Andre' Stevenson

Art Unit 2812

Application/Control Number: 09/865,454

Page 14

Art Unit: 2812

05/13/03

Handwritten signature